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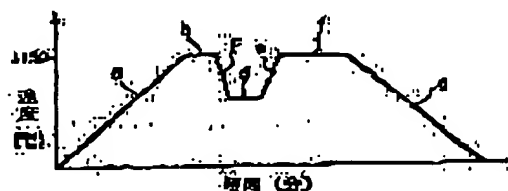
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## (54) MANUFACTURE OF COMPOUND SEMICONDUCTOR

### (57)Abstract

**PROBLEM TO BE SOLVED:** To reduce cracks and chippings which are generated when a wafer is cut by a method wherein, when an element is formed, by a CVD method, on the sapphire substrate having a specific thickness, the substrate is heated up to a prescribed temperature at a specific temperature rise speed and the substrate is cooled at a specific temperature fall speed.

**SOLUTION:** A compound semiconductor material such as a gallium nitride-based compound or the like is laminated on a sapphire substrate (20 to 60 $\mu$ m) which is manufactured to be thin in advance. In a lamination process by a CVD method, a temperature rise speed in a first temperature rise process (a) in the CVD process is set at 40 to 60° C/min or lower. Then, by taking into consideration that an element layer is formed on a substrate, a temperature fall speed in a temperature fall process (g) in which a high-temperature process is finished is set at 20 to 30° C/min at about 1/2 of the temperature rise speed. In this manner, when a temperature inclination is made more gentle, cracks and chippings are prevented when the wafer is cut, and it is possible to prevent the substrate from being broken in the CVD process.



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